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**ZATAPINOMA, A NEW GENUS OF ANTS  
FROM INDIA<sup>1</sup>**

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IN a collection of ants made by the late Dr. N. Annandale on Barkuda Island, in Chilka Lake, on the east coast of India, I find some specimens which are of unusual interest, first, because they represent a new genus of Dolichoderinæ, a subfamily comprising only sixteen genera and of which only three were established during the present century, *Froggattella Forel* (1902), *Engramma Forel* (1905), and *Semonius Forel* (1910). Second, the specimens show that the new genus has a strongly dimorphic worker, i. e., is represented by a large-headed soldier and a small-headed worker (proper) caste. This condition is well known in the subfamilies Myrmicinæ and Formicinæ, but has never been observed in Dolichoderinæ. Even in Azteca, in which the workers of certain species may be strongly polymorphic, the maxima and minima forms are always connected by intermediates (desmergates). Third, the soldiers of the new Indian ant have the clypeus and mandibles modified in such a way as to indicate that this caste is phragmotic in habit, i. e., closes the nest entrance with the anterior portion of the head. This condition is known to occur in four sporadic Formicine and Myrmicine subgenera, namely *Cololopsis*, *Colobopheidole*, *Colobostruma* and *Colobocrema*, be-

<sup>1</sup> Contributions from the Entomological Laboratory of the Bussey Institution, Harvard University, no. 280.

longing to the genera *Camponotus*, *Pheidole*, *Epopostruma* and *Crematogaster*, respectively, but no approach to it has been observed hitherto in any dolichoderine genus.

### ***Zatapinoma* gen. nov.**

Closely related to *Tapinoma Förster*, but with distinct soldier and worker forms. Integument thin and collapsible on drying. Soldier with large sub-oblong head and stout, convex mandibles armed with coarse, unequal teeth. Eyes much smaller than in *Tapinoma* but distinctly and finely faceted, each in preparations cleared in caustic potash apparently lying in a funnel-shaped, chitinous ring. Maxillary palpi moderately long, 6-jointed; labial palpi 4-jointed. Clypeus broad, high and anteriorly truncated, not produced back between the frontal carinae, which are very short and widely separated. Antennae 12-jointed, the funiculi with the second joint very short and the terminal joint somewhat enlarged, glandiform and nearly as long as the three preceding joints together. Thorax shaped much as in *Tapinoma*, with distinct promesonotal and mesoepinotal sutures. Petiole very small, flattened above, with the merest vestige of a node represented by a low, sharp, transverse ridge at the anterior end, its ventral surface very convex and rounded. Gaster rather large, elongate elliptical, its posterior end obtusely rounded, with the cloacal orifice on the ventral side. Gizzard closely resembling that of *Tapinoma*. Femora broad and compressed; median and hind tibiae each with one very long and one very short spur. Tarsal claws simple.

Worker with a small head, shaped as in *Tapinoma*, but with much smaller eyes, lying as in the soldier in chitinous ring-shaped sockets. Mandibles with a few stout apical and numerous minute subequal basal teeth. Gaster small, broadly elliptical. In other respects resembling the soldier. Genotype: *Zatapinoma annandalei* sp. nov.

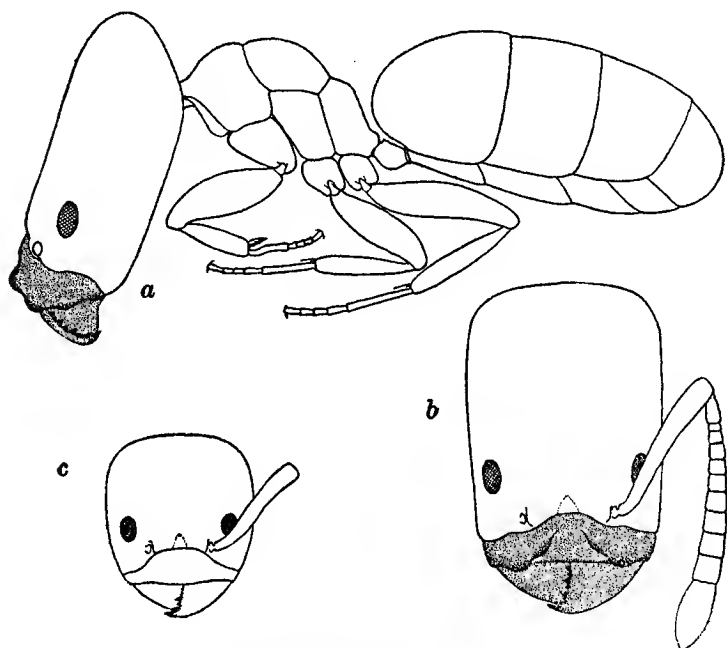
### ***Zatapinoma annandalei* sp. nov.**

SOLDIER (Figs. 1a and 1b)

Length 2.8—3 mm.

Head one and one half times as long as broad, as broad in front as behind, with straight, parallel sides, very feebly convex posterior border and rounded posterior corners; in profile as high in front as behind, with straight dorsal and gular contours. Eyes small, flat or even slightly concave, elliptical, with about a dozen facets in their greatest longitudinal diameter,

situated just in front of the median third of the head. Mandibles large and convex, with evenly arcuate external borders, the apical borders with nine or ten coarse, alternately large and small teeth. Clypeus more than three times as broad as long, high and truncated anteriorly, on each side with an oblique, blunt, somewhat bilobed ridge or projection, the anterior border nearly straight in the middle, bluntly projecting at each corner. Frontal carinae somewhat further apart than the distance of either from the lateral border of the head. Frontal area rather indistinct, large and triangular; frontal groove lacking. Antennal scapes curved at the base, slightly thickened apically, their tips reaching only to the posterior two fifths of the sides of the head; funiculi distinctly enlarged toward the tip; first joint



*Zatapinoma annandalei* sp. nov.

a, soldier in profile; b, head of same, dorsal view; c, head of worker.

somewhat more than twice as long as broad, joints 2-10 somewhat broader than long, the second much smaller and more transverse than the third, the tenth very nearly as long as broad. Thorax short, with robust pro- and mesonotum, but much narrower than the head, the pronotum broader than long, convex, with rounded humeri; the mesonotum also convex above

and rising somewhat above the pronotum, nearly as broad as long, narrowed posteriorly to the distinct but shallow mesoëpinal impression. Epinotum as long as broad, with rectangular ventral outline, narrower than the anterior portion of the mesonotum, in profile with short base and long, sloping and rather flat declivity. Petiole subrectangular, slightly broader than long.

Smooth and nearly opaque or slightly glossy; mandibles and clypeus opaque, very finely, densely and indistinctly punctate-reticulate.

Hairs whitish, short, very few in number and confined to the mandibles, clypeus, tips of antennal scapes and tip of gaster. Pubescence white, short, delicate and inconspicuous, rather uniformly distributed over the whole body, somewhat denser on the appendages.

Pale whitish yellow; mandibles and clypeus yellowish brown; mandibular teeth and eyes black; bases of gastric segments brownish.

#### WORKER (Fig. 1c)

Length 1.3—1.5 mm.

Head rounded subrectangular, very slightly longer than broad, slightly narrower in front than behind, with broadly rounded posterior corners and slightly convex posterior border. Eyes feebly convex, in front of the median transverse diameter of the head. Mandibles less convex than in the soldier, with four large, unequal apical teeth and ten crowded, subequal basal denticles. Clypeus convex and evenly rounded, not truncated or raised anteriorly, with straight, entire anterior border. Frontal area indistinct; frontal carinae very short and widely separated, as in the soldier. Antennal scapes not reaching to the posterior border of the head. Thorax and petiole much as in the soldier, but the pro- and mesonotum less robust, the gaster smaller, shorter and broadly elliptical. Femora somewhat less dilated.

Smooth and sub-opaque like the soldier, but the mandibles and clypeus not differently sculptured from the remainder of the body.

Pilosity and pubescence even finer and more indistinct than in the soldier.

Entirely pale whitish yellow, except the mandibular teeth, which are reddish. Even the eyes seem to have lost most of their pigment in the dried specimens.

Described from three soldiers and eight workers taken from two colonies by Dr. N. Annandale on Barkuda Island, Chilka Lake, Ganjam District, Madras Presidency. They were accompanied by the following notes.

“Nest No. 77. Oct. 20, 1923. (?) *Tapinoma* sp. In dead branch of *Pongamia* tree, with termites. Several minute *Psela*-*phid* beetles present with the ants. The females, as well as

the workers, carry the grubs. Several females were present, and a large number of grubs and pupæ.

"Nest No. 79. Oct. 22, 1923. (?) *Tapinoma* sp. Nest in an irregular mass of earthy matter in the hollow of a dead stump of a branch of *Pongamia glabra*. Nest much more populous than No. 77, and no termites present."

The word 'females' in these notes must refer to the soldiers. These, of course, judging from the volume of their gasters, may, perhaps be fertile and really represent or replace the queens in the colonies. The small eyes, very pale color and thin integument show that both the soldiers and workers must lead a concealed life. They probably leave the nest only at night.